

THE
PSYCHOLOGICAL BULLETIN

PROCEEDINGS OF THE TWELFTH ANNUAL MEETING
OF THE AMERICAN PSYCHOLOGICAL
ASSOCIATION, ST. LOUIS, MO.,
DECEMBER 29 AND 30, 1903.

REPORT OF THE SECRETARY.

The twelfth annual meeting of the American Psychological Association was held in the rooms of the Central High School Building, St. Louis, Mo., on Tuesday and Wednesday, December 29 and 30, 1903, in affiliation with the American Association for the Advancement of Science and the American Society of Naturalists.

President William L. Bryan was in the chair and in the absence of the secretary, Professor C. E. Seashore acted in his place.

At the regular business meeting held on December 29, the following was transacted. Election of officers for 1904: *President*, Professor William James, Harvard University; *Members of the Council to serve for three years*, Professor Hugo Münsterberg, Harvard University, and Henry Rutgers Marshall, Esq., New York City. The following new members were elected: Professor Frank C. Doan, Ohio University; Professor T. G. Duvall, Ohio Wesleyan University; Professor Willard C. Gore, University of Chicago; Professor T. Harvey Haines, Ohio State University; Professor F. S. Hoffman, Union College; Dr. C. N. McAllister, Yale University; Dr. James Burt Miner, University of Illinois; Professor A. W. Moore, University of Chicago; Dr. R. M. Ogden, University of Missouri; Professor I. W. Riley, University of New Brunswick; Mr.

Warren M. Steele, Yale University; Mr. H. W. Stuart; Professor Edgar J. Swift, Washington University; Professor Norman Triplett, Kansas State Normal School; Dr. E. B. Twitmyer, University of Pennsylvania; Mr. J. B. Watson, University of Chicago.

It was voted that the Council be empowered to fill any vacancies in office which might arise during the year.

The Council presented a report from the Committee on Bibliography which appears below, and recommended that the report be laid on the table and the Committee be continued for another year. The recommendation of the Council was adopted.

A communication was received from Professor J. Mark Baldwin inviting the Association to hold its next annual meeting in Baltimore. A vote of thanks was extended to Professor Baldwin, and the selection of the place of meeting was left to the Council to be decided in conference with the Council of the Naturalists.

REPORT OF THE COMMITTEE ON BIBLIOGRAPHY.

To the American Psychological Association.

Your Committee on Bibliography respectfully reports that it has, through a subcommittee consisting of Professor H. C. Warren, examined the bibliography prepared by Professor Leuba and are unanimously agreed upon the purchase of such portions of Professor Leuba's collection as belong to years prior to 1893, provided that Professor Leuba is willing to sell at a price not in excess of \$150. From causes incidental to the action of a scattered committee and to the necessary preoccupations of some of our members this conclusion was not reached until the end of October, at which time it seemed best to postpone definite action until after the meeting of the Association, especially as the committee conceives that in several particulars the Association may desire to modify its action of a year ago.

The experience of the year has made clear the very great difficulty of carrying out such an undertaking by means of a committee. A small group of men is admirably suited to deliberative action and for the shaping of general plans, but is seriously handicapped in executive action by its numbers, and

labors under almost impossible hindrances when it is composed of scattered members for all of whom the work of the committee must be made secondary to other and more pressing demands. In the opinion of the present committee it is essential that some provision be made for placing the actual management of the work of collecting the bibliography in the hands of a single competent person.

In thus recommending a single executive the committee has not in mind the employing of an expert bibliographer who should do the whole of the work with his own hand, but rather of an agent who could carry on the correspondence necessary to secure the coöperation in this undertaking of the members of the association and others, who could look after the purchase and distribution of cards, could classify the cards when made out, and in general do all the various minor things that are necessary to bring the work to a successful issue.

Such an executive agent might be appointed directly by the association and take the place of the present Committee on Bibliography, and to this the Committee would gladly accede, or the committee might be authorized to employ such a person to do the work under its general supervision.

It would be advisable that this executive agent should not be otherwise employed in such a way as to prevent his giving his full attention to the bibliography or to prevent his moving from place to place as the work of the bibliography might require.

The committee believes that the services of a competent person could be secured for one year for \$1,000. And with that in view it recommends a further grant by the association of \$500 toward the salary of such an executive agent, and the application by the association to the Trustees of the Carnegie Institution for an equal sum for the same purpose.

The committee realizes that many members of the association may deem it unwise to go further with the bibliography at such an increased expense, and they therefore urge upon the association a full discussion, in the light of the facts above presented, of the whole question of collecting a bibliography at all.

If the association should, after discussion, decide to adopt the course suggested above, certain changes will be necessary

in the vote of last year to make the funds then appropriated available for the use of such an executive agent, and in case of such a decision the committee recommends such a vote.

And finally, in order that the field may be clear for any action that the association may desire, the members of the present Committee on Bibliography beg to be allowed to lay down the task imposed upon them and to render their resignations as members of the committee.

Very respectfully submitted,

THE COMMITTEE ON BIBLIOGRAPHY,

by *E. C. Sanford, Chairman.*

REPORT OF THE TREASURER FOR 1903.

DR.

To balance at last meeting.....	\$1,796.63
Dues of members.....	312.
Sales of Proceedings.....	.50
	<hr/>
	\$2,109.13

CR.

By Expenditures for

Printing.....	\$ 36.20
Assessment for Washington meeting.....	10.
Proceedings.....	6.11
Postage.....	18.20
Stationery.....	6.90
Clerical Assistance.....	15.70
Exchange on cheques.	3.
	<hr/>
	96.11
Balance	\$2,013.02
Accumulated interest on deposits approximate....	240.00
	<hr/>
	\$2,253.02

Audited by the Council and found correct.

LIVINGSTON FARRAND,
Secretary and Treasurer.

ABSTRACTS OF PAPERS.

Address of the President: *Theory and Practice*.¹ By WM. L. BRYANT.

I. *The Failure of Theory*.—When a theory will not work the difficulty lies in the fact that it is not true—not true that is

¹ To appear in full in THE PSYCHOLOGICAL REVIEW, March, 1904.

with a sufficient degree of approximation. An action is always necessarily concrete, subject not only to certain known general laws and to certain known definite conditions but subject to the whole of reality then and there effectively present. No theory completely embraces all the conditions determining any action. Some conditions are omitted unintentionally because of ignorance. Some conditions are excluded intentionally, on the one hand as disturbances which interfere with the accuracy of experimental results, on the other hand as complications which interfere with the possibility of mathematical or logical treatment. The intentional exclusion of disturbing or complicating conditions is not a procedure which requires defense. Its defense is found in the whole history of learning and after that in the history of the practical applications of learning. To make any progress, we must focus for certain things and be temporarily blind to environing things.

It may be, however, that in arriving at a theoretical result, either because of ignorance or because of the very efforts to be exact or to be logical, one will leave out of account conditions which are not in fact insignificant, which will not be absent when the bit of theory is tried, which will be there to upset all my previsions and to bring one to confusion. The air ship will not fly. In such a case, the best fortune is immediate and decisive practical trial. Decisive failure destroys our illusions, if we have them, and sets us looking for conditions which have been overlooked. Unhappily, however, decisive trial of theoretical results is often indefinitely postponed. In this case the scholar must be of extraordinary constitution if he escapes the historic disease of his kind, namely, blindness to realities which his method has not embraced.

I consider two types of this illusion of the scholar, *the illusion of consistency* and *the illusion of precision*. I wish to show how in both cases these illusions spring directly out of the painstaking employment of methods which must be employed to discover the truth and how when they have risen they render the scholar blind to certain aspects of truth which are not insignificant either in theory or in practice.

The greater part of the paper is a detailed discussion of these two illusions and their consequences for theory and practice

II. *The Success of Theory*.—The question then arises, how may we mediate between abstract aspects or fragments of truth and the requirements of practice. There are two answers to this question which have weight beyond individual opinion.

1. *Concrete science* as developed in the higher schools of technology adds new chapters to theoretical science and at the same time makes necessary bridges between abstract science and practice. In psychology we have some such concrete studies. The writer believes that it is good strategy for the experimental psychologist to supplement this investigation of isolated activities and functions by the investigation of concrete activities and functions as they appear in everyday life.

2. *Experience with affairs* is indispensable. The practical effects of learning come through scholars who are also men of affairs. In such a case the scholar does not confront society with remote academic advice. With all his learning, experience and will he grapples with men and affairs as they are. He is instructed by the affairs which he guides.

In a word the scholar may at a great price become a statesman and when this occurs whether upon a great scale or a small one, we have one solution of the ancient problem of theory and practice.

The Psychology of Æsthetic Reaction to Rectangular Forms.

By T. H. HAINES AND A. E. DAVIES.

The importance of the golden section among rectangular forms, since Zeising, makes it the natural starting point of any investigation into the psychology of the æsthetics of form, although Fechner, Witmer and Angier have shown it to be only an approximation to the facts.

The field of æsthetics is burdened with contradictory theories, *e. g.*, there are (1) what we may call the mathematical theory, (2) the physiological theory, (3) the association theory, (4) the balance of attention theory, and (5) the interpretation or development theory. In such a field there is a loud call for constructive work.

Fechner's card method was improved by Witmer; and ours improves upon the method of Witmer in giving a series of cards

varying in width, serially and only one at a time. Results from twenty-three observers show the existence of several types of form in many cases even for the same individual. They are chosen because of (1) familiarity with the form, (2) associations with the form, (3) a solidity and substantiality in the form, and (4) combinations of these. The difference in types shows at once the error in averaging such results. Such an average destroys all meaning.

To further perfect this method we constructed a simple machine by means of which the observer could make at will in a large black screen before him, by simply pulling one of the two cords in his hands, any rectangle from a square of 100 mm. down to the narrowest slit. This at once gave a better command of the experiment, and it simplified his task, by making it more purely a choice among forms. A more constant state of attention is secured in discriminating the really preferable, because he can hurry over parts of the series which he knows he does not like.

This apparatus was used in two ways. In one the shutter which narrowed the figure moved horizontally, thus giving a figure higher than it was broad, and in the other it moved vertically and so gave a figure broader than high. This comparison gives results parallel in part only to the results obtained by Fechner in his measurements of gallery pictures.

The motives determining the choice of figures with our observers fall into five classes.

1. In the first place, those which seem to rest in the form itself. It is satisfactory. It is substantial.
2. Cases where the sensory data immediately develop an interest. They are *suggestive*.
3. Expectation is definite. These are *associative*.
4. Simple sensory elements make for or against the æsthetic reaction.
5. A purely motor element assumes prominence. These last are largely negative.

In the previous explanation of such phenomena, (3) and (5) have assumed great importance. The insight we have been able to gain seems to show that (5) is greatly over-emphasized

and that one can get underneath the rather general statements of associationism, and see the minuter mechanism of the processes involved. The simple sensory elements (4) prove to be important factors. And in (1) the simple contentment with the form as such (the pure æsthetic) we have the simplest possible case of cognition coupled with the feeling tone, the elementary liking which is the beginning of all æsthetics. There is probably here the bare scheme of Professor Baldwin's circular reaction. It only starts back. In the *suggestive* cases (2) this circular process goes further. I do reach out to get more of it. I stop at a given form, I do not know why, and it develops. Other times the end of the process grows out of the process and is defined in idea before it is realized in fact. This is the close counterpart of a so-called association.

*The Experimental Study of Mental Fatigue.*¹ By C. E. SEASHORE.

I. Some ideas which we must abolish :

1. The idea that fatigue is a concrete, homogeneous quantity of something which can be measured in terms of the fluctuations in the efficiency of some particular work.

2. The idea that 'only the difficulty, and not the kind of mental work is significant for the general extent of fatigue' (Kraepelin, *Phil. Stud.*, XIX., 479).

3. The hope of obtaining results of wide practical value by gross measurements without a preliminary critique of method.

II. Some legitimate and promising lines of progress.

1. The development of methods of measuring by which the mental work may be recorded for sufficient periods of time, in sufficient detail, and under conditions favorable for introspective interpretation.

2. The analysis of the fatigue curve under controllable conditions.

3. The detailed examination of such factors as are necessarily interrelated with fatigue.

4. The detailed examination of qualitative, intensive, extensive, and temporal attributes of mental work ; also the effect of different degrees of complexity and stability.

¹ To appear in full in an early issue of THE PSYCHOLOGICAL REVIEW.

5. The correlation of psychological and underlying factors, such as physiological, chemical, histological and electrical phenomena.

6. The analysis of the individual fatigue-resistance.

7. The analysis of concrete experience, *e. g.*, a school period, with the object of applying the principles of fatigue for practical purposes.

The Measurement of Individual Differences. By J. McKEEN CATTELL.

The speaker briefly reviewed work that he had already published on the subject, and then considered the methods for expressing individual differences in mental traits in quantitative terms, and the extent to which the distribution of such traits corresponds to the theoretic distribution of the probability curve. Even if all men formed at birth a species in which the traits were normally distributed, this would not continue to be the case when groups had been selected. Thus during school and college and in the subsequent competition, a group of scientific men has been selected which would consist chiefly of those on the positive side of the curve, and they might not themselves form a normal curve of distribution. Their performance may not be due to a large number of small causes equally likely to be positive or negative, but to a few large causes, usually positive. The data compiled by the speaker seemed to show that the performance of scientific men is distributed more nearly in accord with the positive half of the curve, than with the whole curve, and this corresponds with the salaries paid for their services. But this also holds generally if we take the earnings of the whole community.

Measurements and Tests for Children. By E. A. KIRKPATRICK. (Read by title.)

Attributes of Sensation. By MAX MEYER.

The Attributes of a Simple Sensation of Tone. By MAX MEYER.

(The two papers by Dr. Meyer will appear in full in THE PSYCHOLOGICAL REVIEW, the first in March, 1904.)

*The Mechanism of Imitation.*¹ By F. C. FRENCH.

Imitation is often spoken of as an instinct. James, Royce, Tarde, and Baldwin are among the recent writers on psychology who take this view of imitation more or less explicitly. Instincts are due to hereditary paths of discharge in the nervous system. We can understand a definite reflex becoming hereditary, *e. g.*, the act of swallowing. But in the case of imitation we have no single definite act, but an indefinite variety of actions. No one definite set of nerve adjustments could bring about such different activities as the imitations of vocal sounds, hand movements, head movements, etc. Imitation is not a faculty. There is no such thing as 'imitation' but only imitative actions. Our instincts are sensori-motor, imitations ideomotor. Since ideas are not hereditary the acts dependent upon them cannot be. Every imitation is an acquired imitation.

Stout (*The Groundwork of Psychology*, p. 82) says: "Both spontaneous and deliberate imitation presuppose a motor association between the perception or idea of the act to be imitated, and more or less similar movements which the child has already learned to perform." These motor associations may be brought about by (1) instincts (*e. g.*, the child instinctively cries at its own pain, thus associates the sound of the cry with the cry movements and so on the general principle of ideomotor action cries on hearing another cry), (2) random movements (*e. g.*, hand movement), (3) imitations of the child by others (*e. g.*, the imitative smile—the mother smiles when she sees the smiling face of her babe, the child then associated its own motor feelings of the smile with the visual image of the smile reflected on the mother's face, and so can smile when it sees another smile). Complex imitations of the later life are simply combinations of elemental movements already learned. As imagination depends upon ideational experience for its material, so imitation can perform no act for which earlier motor experience does not furnish the elements.

Closely connected with imitation is sympathy. In order to explain the first sympathetic feelings we need only to add to imitation the James-Lange theory of emotions. The child sees another in an attitude of pain or grief, imitatively assumes that

¹ To appear in full in THE PSYCHOLOGICAL REVIEW, March, 1904.

attitude, and then the assumption of the attitude excites the corresponding emotion. Even without the James-Lange theory we need not ascribe sympathy to instinct. The child first has certain feelings of its own, they become associated with certain expressive activities, then with these associations established he sees the expression of feeling on the part of others, imitates these expressive acts and so gets the associated feelings. There is no reason for regarding either imitation or sympathy as instinctive. Both can be explained by early established motor associations.

*A Preliminary Paper on the Psychology of the English Sparrow.*¹ By JAMES P. PORTER.

This paper deals with the methods used and results obtained in tests made on English sparrows. A number of different birds of each sex have been tested with a food box to be opened in ways suited to the structure of the animal; Dr. Small's complex maze was also used. Experiments were made on the sparrow's sense of number, so-called; their sense of direction; and their color preferences. With one female bird tests were made on the power to discriminate colors, forms and designs. Some of these latter followed closely those made by Dr. Kinnaman with his two monkeys. A series of observations under standard conditions were made to get some clue as to the English sparrow's method of approaching his food.

The conclusions are as follows: (1) The English sparrow's rate of learning is very rapid. The great reduction in time and number of efforts is made possible by the bird's locating the right part to be worked on. If results are compared with those of Drs. Thorndike, Small and Kinnaman for white rats, cats, dogs and monkeys, the rate of learning for these birds is found to be quite as rapid. This is true even when the birds are tested with the same maze (only smaller) which Drs. Small and Kinnaman used. (2) There is in these birds ample proof of the ability to profit by experience, and some proof of the ability to profit by the experience of others; or of imitation. Additional experiments are needed to make possible an unqualified statement on this point. (3) The first opening of the food box, or

¹To appear in full in an early issue of THE PSYCHOLOGICAL REVIEW.

any other first success, is due to happy accident. There is no sign of reason in the sense of looking ahead and suiting of means to end. (4) These birds very readily form habits, and yet they can change these habitual relations to suit changes made by the experimenter. They simplify ways of opening a door until there is no useless movement left. (5) Their range of attention is probably narrow, and anything not following closely their definitely directed efforts they seem not to profit by. Yet it is surprising how well they attend to the matter in hand. (6) They are persistency itself. Very little resting is done after the bird is inside the maze, and they seem to never tire of making another effort to get in the food box. (7) Any new object they at first carefully avoid until they have tested it. Their fear is not a senseless one. They do not approach the object at once, nor do they leave it alone. The work with them both in the laboratory and outside has brought out their wariness in a striking way. (8) Although the conditions were not the same as for the monkeys, the birds in the number tests often made as many correct choices; also for the color tests for the one female bird tried. With the forms this same female showed no discrimination at all; but with the designs she learned to discriminate perfectly where the monkeys gave entirely negative results.

The biological meaning of the above conclusions for the English sparrow can be best pointed out and discussed after similar experiments have been made with other birds.

The Existential Proposition. By CHRISTINE LADD FRANKLIN. (Read by title.)

The Psychology of Judgment. By JOHN DEWEY.

The paper called attention to the fact that from the standpoint of consciousness as a stream in which there are both continuity and change, the distinctions of the subject, predicate and copula do not appear with the same definiteness as they do from either the logical or the linguistic standpoint. As a contribution, toward the statement of their psychical equivalents there was suggested a certain interpretation of James' well known distinction of the relatively substantive and transitive of the

focal and marginal aspects of the stream. From this standpoint, the subject is those phases which are moving from the fringe into the focus, while the predicate in those phases of the fringe which anticipate what the stream is moving toward, and thus stand for the direction of interest and attention. The 'local sign' of the subject, on this basis, seems to be feelings of resistance and tension; that of the predicate feelings of relief and resolution.

Researches in Progress in the Psychological Laboratory of Harvard University. By HUGO MÜNSTERBERG.

WESTERN BRANCH OF THE AMERICAN PSYCHOLOGICAL
ASSOCIATION.

The Western Branch of the Psychological Association held its second annual meeting in the city of Chicago on November 27, 1903. Seven institutions were represented at the session by fifteen persons. The program contained the following papers:

Some Stereoscopic Problems. By PROFESSOR JOSEPH JASTROW.

The Image. By PROFESSOR GEORGE H. MEAD.

New Features in the Equipment of American Laboratories.
By DR. JAMES BURT MINER.

The Psychology of Advertising. By PROFESSOR WALTER D.
SCOTT.

The Definition of Philosophy, Religion and Æsthetics. By
PROFESSOR G. A. TAWNEY.

The Social Psychology of Adam Smith. By PROFESSOR J. H.
TUFTS.

*The Psychical Development of the White Rat Correlated with
the Growth of its Central Nervous System.* By DR. JOHN
B. WATSON.

Messrs. Moore, Scott, and Smith were elected as the Executive Committee for the ensuing year.

The next meeting will be held at the University of Chicago.

GEORGE A. COE,
Secretary.

AMERICAN PHILOSOPHICAL ASSOCIATION.

The Third Annual Meeting of the American Philosophical Association was held at Princeton, under the auspices of the University, December 29, 30 and 31, 1903. The meeting was attended by over fifty members and others, including members of the American Psychological Association unable to attend the meeting of that Association in St. Louis. The following brief abstracts of papers read were prepared by the Secretary from longer abstracts furnished by the writers for the official report of Proceedings in the *Philosophical Review*.

The President's Address: The Eternal and the Practical. By
JOSIAH ROYCE.

Pragmatism is right in asserting that every judgment, whatever else it may prove to be, is a constructive response to a situation, and is not a mere copying of an externally given object. Nevertheless, in so far as we ourselves observe that our present judgment has only this character we find that we need that it should be more than this, namely, that it should not only be ours, but true. This need for truth is the need that there should be other points of view, other actual judgments, responsive to the same situation, in other ways, of the same object. We conceive that all these judgments ought so to agree as to confirm one another, and so to unite in one system of truth as to characterize harmoniously the same object. These various points of view, in order thus to harmonize, and this ought, in order to hold for all of them, must be conceived as belonging to, and as being included within, a single self, whose common conscious purpose defines the ought to which each of the various judgments is to conform. In so far as we conceive this self as like ourselves transient, passing, variable, its inclusive constructive judgments become, like our own, not genuinely true, but only special points of view, which determine no genuine ought. Accordingly, to conceive our judgments as true, we need to con-

ceive them as partial functions of a self which is so inclusive of all possible points of view regarding our object as to remain invariant in the presence of all conceivable additional points of view, and so conscious of its own finished and invariable purpose as to define an ought that determines the truth or falsity of every possible judgment about this object. If there is such a self, it is invariant and eternal, without thereby ceasing to be expressed in finite and practical activities, such as appear in our own judgments; and our need to make judgments that can be true or false is satisfied. If there is no such self, no judgment is neither true or false. The need for the eternal is consequently one of the deepest of all our practical needs. Herein lies at once the justification of pragmatism and the logical impossibility of pure pragmatism. Everything finite and temporal is practical. All that is practical borrows its truth from the eternal.

Theories of Truth: a Contribution to Critique of Cognition.

By KARL SCHMIDT. (Read by title.)

The paper criticizes the theory of truth which Heinrich Hertz has given in the introduction to his *Principien der Mechanik*. His theory is of the dualistic type and is remarkable in this, that it determines the *degree* of correspondence of a system with its object.

The Relation of Appreciation to Scientific Descriptions of Values. By WILBUR M. URBAN.

The antithesis between appreciation and description is unjustified. No appreciation, still less progressive appreciation, is possible without corresponding description, presentation to consciousness of attitude, as a basis of further appreciation. It is also true that there is no description without some degree of appreciation (purpose) which gives it its meaning. The antithesis really reduces itself to a distinction between two types of description, which may be called appreciative and scientific.

Purpose as a Logical Category. By J. E. CREIGHTON.

An examination of some arguments in support of the view that thought is instrumental or teleological in character and

subordinate to the purposes of practical life. The objections urged against this view were: (1) the ambiguity in the use made of the term 'practical purpose,' which now denotes material ends requiring physical movements, and now includes the solution of purely practical problems; (2) the necessary subjectivity and relativity of the position; (3) its lack of any principle for unifying experience; (4) the sharp opposition, amounting to dualism, between thought and the antecedent experience from which it is said to arise; (5) that fact that a logical and ontological system is presupposed very different from that to which the view in question explicitly appeals.

A Thesis: Hegel's Voyage of Discovery Reaches as its Goal an Insight into the Necessity of Goodness and Righteousness in an Absolute Being and into the Consequent Necessity that the Absolute has the Form of Personality. By WILLIAM T. HARRIS.

Hegel had seen the necessity of goodness and righteousness in the Absolute as a postulate to explain the existence and preservation of the finite. Thus, in the *Philosophy of Religion* (Vol. II., p. 56): "Goodness consists in the fact that the world is. The world does not exist of its own right. It has been given its right to exist. This act of sharing his being manifests the eternal goodness of God." In the *Phenomenology*, Hegel's 'voyage of discovery,' he states this insight with great prolixity, but in terms technical in the extreme.

General Discussion on the Question, What Place has Æsthetics among the Disciplines of Philosophy. By GEORGE SANTAYANA.

While it would be easy to delimitate any sort of æsthetic field ideally, actual æsthetic interests cannot be covered by any one discipline of any kind. Psychology, in a certain sense, can retract or absorb everything, but only in retrospect and for a third person; æsthetic judgment and poetic activity are in their living interest as much prior to psychology and independent of it, as mathematics or physics can be. Ideal science, on the other hand, cannot absorb all æsthetics, since the psychology of taste

and the history of art are subjects for natural philosophy; nor is there a separable branch of ideal science called æsthetics.

A separable æsthetic science is impossible. What exists is, first, a psychological description of æsthetic experience, and second, all art of rational criticism in which æsthetic values are compared and judged according to the contribution they make, directly or indirectly, to all human good.

By WILLIAM A. HAMMOND.

The original differentiation of æsthetics from other disciplines is Aristotelian, the name Baumgarten's, and the modern statement of the problem Kant's. The general tendency of contemporary æsthetic studies is to make the discipline an empirical science. As a normative science, however, dealing with values, it falls outside of psychology as a phenomenistic science. As a normative science concerned with the standards of beauty, sublimity, etc., and with the psychology of feeling, it is differentiated from ethics, whose concern is with the standards of right and wrong and with the psychology of volition. From sociology it differs in its main concern with the qualitative nature of the æsthetic standard idea and in its concern with individual psychology. From metaphysics it differs in aiming to become a particular empirical science, deriving its lass from induction applied to a specific group of facts; but in relating æsthetic values to the supreme values of life, æsthetics demands ultimately a metaphysics.

By ETHEL D. PUFFER.

The reconciliation of philosophical and psychological æsthetics rests on the following principle: The philosophical definition of beauty must set forth its purpose or function in the universe; philosophy lays down what beauty has to do. But, since it is in our experience of beauty that its end is accomplished, psychology must deal with the various means through which this end is reached. To illustrate: Modern idealism tends to find the function of beauty in the universe a reconciling one, as in Schiller's 'vindication of freedom in the phenomenal world. But reconciliation in its full sense can only take place in imme-

diate experience. The psychologist has then to ask what colors, lines, tones, rhythms, etc., favorably stimulate, and what combinations bring to repose; and any given work of art may be analyzed, and its effect explained, as attaining, or not, to this combination through the effect of its elements on the psychophysical organism according to general psychological laws.

By FRANK CHAPMAN SHARP.

The two objections urged against merging æsthetics in psychology are: (1) The alleged existence of a standard of beauty constituting æsthetics a normative science, and (2) the alleged impossibility of explaining the nature of beauty without metaphysics. As regards (1) it was maintained that, defining the beautiful as those relations of sensations or images which tend to give pleasure, we can admit the possibility of a standard of beauty and objective æsthetic judgments, while holding that this result can be reached by purely psychological methods. As regards (2) an examination of the ambiguity in the Hegelian definition, beauty is the appearance of the idea to sense, showed that the vitality of the view in question was derived from misunderstanding. The true interpretation, namely, the object by its qualities suggests the Idea to the mind, is confused with the interpretation, the Idea actually transfuses the finite object with its presence. The same thesis could be proved for other metaphysical doctrines.

Jonathan Edwards as Thinker and Philosopher. By ALEXANDER T. ORMOND.

The first part of this paper dealt with Edwards' philosophical inheritance; the second contained a reconstruction of his system of thought. The center of the system was found in the doctrine of creation and decrees. The world is the expressly willed manifestation of a divine plan. The motive of the creation is God's complacent and benevolent love. Only spirits really exist, and creation is continuous and identical with preservation. Edwards' doctrines of the fall, original sin, redemption and the union of freedom and determinism were discussed in relation to the central doctrine of creation, and the conclusion

was reached that, while it is plausible to regard Edwards as a 'voluntarist,' if we make his doctrine of the will supreme, he appears in closer agreement with the older thinkers who subordinate the divine will to the divine wisdom, if we make the central motive of his system the doctrine of creation and decrees.

The Concept of Consciousness. By RALPH BARTON PERRY.

The term 'consciousness' is at present used too indiscriminately to mean anything. In its application to the field of psychology it may be understood to signify relativity or inadequacy defined by the corrective standard of objective experience. But consciousness so defined cannot be erected into a metaphysical principle. Psychological idealism undertakes the contradictory definition of being in terms of invalid experience. Transcendentalism appeals from relativity to a supreme corrective experience, but in retaining the term 'consciousness,' really characterizes the latter in terms of the former.

The Analysis of Consciousness. By GEORGE R. MONTGOMERY.

Analysis is not mere division in which the whole, or the relations of the parts in and to the whole, is lost. Its true nature is seen in mathematical analysis by x and y coördinates. With this idea of analysis, the term 'consciousness' as the primary concrete in psychology is to be preferred to the proposed alternatives, the 'given' or 'experience,' because though less naïve, it does not lean to the opposition of ego and non-ego as the principal coördination. The subject is not the supporter of the whole of experience; it can be examined as well as the object. The parts are abstract in relation to the whole and must not lose their reference to the whole.

The Meaning of the Psychical from the Standpoint of the Functional Psychology. By H. HEATH BAWDEN.

The functional view regards consciousness as the tensional phase of action, and as thus developed within action and for the sake of action. There are two questions of fundamental importance: (1) How do unconscious acts become conscious? The reply is that consciousness results from the interruption of action. (2) How do conscious acts become unconscious? The

reply is that habitual acts result from the mechanization of conscious acts.

Psychophysics and experimental psychology attempt to define the limits of this tension and facilitation in action. Physiological psychology and comparative psychology show the types of experience within which such tension arises. Both tend to show that the psychical and the physical are one process, with phases of relative tension and relative equilibrium in adaptation.

The real psychical (as distinct from the psychological) is the process *as process*. The psychical is experience undergoing reconstruction. The psychical as process must be distinguished from the psychical as content. The psychical, which I get through introspection (really retrospection), is a content no different in principle from the physical content which I get through so-called external observation.

The difference between the real psychical (the process) and the physical (or any other phase of the content) is a difference of function only, since any phase of the content is capable of reconstruction. No physical is a fixed content; it is content only in relation to some center of transformation. No psychical is simply and only process; it is the reconstruction of old into new content.

A Peculiar State of Consciousness. By JAMES H. LEUBA.

The state in question is one designated by the writer as 'faith.' This is more than belief in the truth of propositions, and it is not confined to the religious life. It is an emotion of the sthenic type; a pleasurable state of increased intensity of life arising from the desire of higher forms of activity. To the increased intensity of life corresponds a narrowing of the field of consciousness. The two together make the faith-state, one of increased suggestibility to the idea connected with its impulses and aspirations; hence belief in these ideas. Faith is a sort of asexual love. Both are late products of human development. Faith arises neither by fortuitous variation nor by adaptation to external conditions, but as a purposive internal adaptation under the pressure of a desire for a mode of life otherwise unrealizable.

The Resemblance of Twins in the Mental Traits. By EDWARD THORNDIKE.

Preliminary report of a study undertaken by means of a grant from the Esther Hermann research fund of the Scientific Alliance of New York. The provisional results were obtained from thirty-five pairs of twins, 9 to 15 years old, all measured and tested by the same person in the same manner. The mental measurements taken were five tests of perception and attention, two of controlled association of ideas, two of rate of movement and two each in addition and multiplication. The degrees of resemblance in the several cases measured by a Pearson coefficient of correlation calculated directly

$$\left(r = \frac{\sum xy}{n\sigma_1\sigma_2} \right)$$

or indirectly from a comparison of the difference between twin and twin with that between any child and any other child of the same age (difference of twins = chance of difference $\sqrt{1 - r^2}$), ranging from .60 to .80, leave no room for doubt that such mental traits as those measured are largely subject to the influence of heredity. These measurements further point to the following conclusions: (1) Mental capacities seem as much due to inborn qualities as are physical traits; (2) the opinion that twins are divided rather sharply into two classes, those nearly identical and those little, if any, more alike than ordinary siblings, is entirely at variance with the facts in these thirty-five pairs; (3) the opinion of Galton that physical likeness need not imply mental likeness is supported; (4) even among the mental traits there appears a decided specialization, *e. g.*, twins may be closely alike in tests of perception and very little alike in tests of the associative processes.

An Establishment of Association in Hermit Crabs. By EDWARD G. SPAULDING.

A description of experiments carried on at the Woods Holl Laboratory in the summer of 1903 under the auspices of the Carnegie Institution. Thirty crabs of the species *Eupagurus longicarpus* were made to enter, within a limited time, a dark-

ened chamber within an aquarium to get their food. This afforded opportunity for the formation of an association between gustatory and visual 'constructs.' The ratio of improvement was from .66, 2.3, .66 entering on the first three days respectively in 1' to, *e. g.*, 32, 100 and 100 on the seventh, twelfth and fourteenth days. On and after the ninth day the effectiveness of the association was tested with only the darkening screen; now 24 out of 28 entered on the ninth day, 24 out of 27 on the fifteenth, 22 out of 27 on the eighteenth, within 3'. Thus with one stimulus the crabs reacted as previously with two, and that against a natural positive heliotropism (as appropriately tested). Conclusion, confirmed by control experiments: Either an excitation or a representation of the taste construct takes place as a result of the association.

Report of Work Done at the Yale Psychological Laboratory.

By CLOYD N. McALLISTER.

By means of kinesiographic camera, photographs of the two eyes were taken during the process of looking at a Müller-Lyer figure. Measurements were taken from a piece of Chinese white placed on the cornea to two fixed spots on the face. A specimen record and diagrams of the results were shown. It was found that the oblique lines in the figure have an influence on the character of the movement. The two eyes do not move in exactly the same way.

The Law of Veracity: a Study in Practical Ethics. By GABRIEL CAMPBELL.

A plea for absolute truthfulness verses utilitarian morality with its tendency to compromise.

Note on the Idea of the Moral Sense in British Thought Prior to Shaftesbury. By JAMES H. TUFTS.

The reference is to Barrow, a preacher commended by Shaftesbury, who in his sermons uses the term 'mental sense' to characterize the moral judgment and emphasizes its immediacy, and who also emphasizes the social instinct and asserts that even a true regard for our own private good will prevent an excessive pursuit of self-interest.

The Chief Factors in the Formation of the Moral Self. By
JAMES H. TUFTS.

The sources for the elements of the moral self are: (1) physical, furnishing the instincts and impulses which are driving forces in conduct; (2) social heredity and education, including (a) ends and ways of acting suggested and adopted without reflection or valuation, and (b) ends and ways of action more consciously commended and involving more valuation; (3) the individual's original contribution, including conscious choice and reflective valuation of conduct. This may be due either to the 'back-door' method of a fortunate variation, or the 'front-door' method of reaction by the self to a new situation.

The Summum Bonum. By EVANDER B. MCGILVARY.

The good is the desirable. A thing is called good or desirable only if we actually desire it, or should desire it if we knew it as it really is, *i. e.*, as adapted to satisfy desires that under certain circumstances would arise. The desirable is differentiated from the desired by the fact that when obtained it does not cause regret, or if regret does arise, the regret, in the case of a desirable object, is overborn by the satisfaction. The *summum bonum* may accordingly be defined either as that single object which is most desirable (*supremum bonum*), or as that series of objects which taken altogether as a series is the most desirable (*bonum consummatum*). The *supremum bonum* varies with the individual; the *bona consummata* of different men, though not without diversity, have certain points of identity (= common good) due to coincidence of more or less independent desires, to benevolent desires and to contagiously aroused desires.

Intensity. By WILMON H. SHELDON.

All facts called intensive are such that their amounts can be described only in terms of time or tendency to change. But no transitive fact can be measured, for it does not admit of superposition.

The Scholastic Notion of the Infinite. By L. VAN BECELAERE,
O.P.

As regards the origin of the notion of the infinite, the scholastics would maintain, in opposition to Descartes, that it is

acquired by the action of our mind suppressing the notion of limits from the idea of some being. As regards the existence of a quantitative material infinite, St. Thomas seems to have hesitated, though in his *Summa* he denies its possibility either as magnitude or as actual multitude. Some modern neo-scholastics, such as Mgr. Mercier, find the arguments of the *Summa* inconclusive and try to solve the objections, but with doubtful success.

The Present Want of an Educational Ideal. By FRANK SEWALL.

The unity of law on which all science rests implies a unity of reason, the supreme wisdom of an infinite divine personality. This conception furnishes an effective educational ideal because it places before the student's mind the human form, as the form of forms reflecting the divine image; and under it all particulars in education are capable of being marshalled into order and subordination.

The Interpretation of Aristotle, Met. Z. 4. 1029 b 29-1030 a 6.
By WM. ROMAINE NEWBOLD.

The essential point was to bring out Aristotle's denial of true conceptual being to a qualified concept such as 'white man.' The reason assigned by Aristotle for this denial is that the conceptual being is the conceptual equivalent of some thing, but when we have one element qualified by another, the resulting complex is not the conceptual equivalent of a 'this' thing, *i. e.*, of a unitary individual. For the text read *τινι* for *τι* ᾧ, 1030 a 2, 3, and point *εἶναι*, ἀλλὰ τὸ ἱματίῳ εἶναι, a 2; ὅλως; ᾧ οὐ a 3. In a 6 construe *μονον* with 5. *εἴπερ*.

The following officers were elected for the ensuing year: President, Professor George Trumbull Ladd (Yale); Vice-President, Professor Frank Thilly (Missouri); Secretary-Treasurer, Professor H. N. Gardiner (Smith); members of the Executive Committee for two years, Professor J. H. Tufts (Chicago) and Professor H. Heath Bawden (Vassar).

H. N. GARDINER,
Secretary.

